An excess of salty food seasons the body with stress

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A diet containing lots of salt can contribute to increased levels of stress, a new study shows.

Scientists found in studies of mice that a high-salt diet increased the levels of a stress hormone by 75%. Experts hope the findings will encourage a review of public health policy around salt consumption, with a view to manufacturers reducing the amount of salt in processed food.

Salt intake

The recommended salt intake for adults is less than six grams a day but most people regularly eat about nine grams. This can contribute to higher blood pressure, which increases the risks of heart attacks, strokes and vascular dementia.

While effects on the heart and circulatory system have been well established, little was known about the impact of a high-salt diet on a person's behavior.

Hormones

To study this, experts from the University of Edinburgh used mice, who ordinarily have a low-salt diet, and gave them high-salt food to reflect the typical intake of humans.

They found that not only did resting stress hormone levels increase, but the mice's hormone response to environmental stress was double that of mice that had a normal diet.

Salt intake increased the activity of genes that produce the proteins in the brain which control how the body responds to stress.

Experts say further studies are already underway to understand if a high-salt intake leads to other behavioral changes such as anxiety and aggression.

The study is published in *Cardiovascular Research*.

"We are what we eat and understanding how high-salt food changes our mental health is an important step to improving well-being. We know that eating too much salt damages our heart, blood vessels and kidneys. This study now tells us that high salt in our food also changes the way our brain handles stress," says Renal Physiology Professor Matthew Bailey at the University of Edinburgh's Center for Cardiovascular Science.

More information: Hannah M Costello et al, High salt intake activates the hypothalamic–pituitary–adrenal axis, amplifies the stress response, and alters tissue glucocorticoid exposure in mice, *Cardiovascular Research* (2022). DOI: 10.1093/cvr/cvac160

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